

**AMENDMENTS TO THE CLAIMS**

1. (Currently Amended) A method of using a vector network analyzer (VNA) for coordinated Voltage Standing-Wave Ratio (VSWR) and Time Domain Reflectometry (TDR) measurement, said method comprising:  
configuring said VNA for identifying discontinuities correlated to a VSWR lobe.
2. (Original) The method of claim 1 additionally comprising:  
identifying a largest VSWR lobe in the frequency band of interest;  
using phase data associated with  $S_{11}$  scattering parameter to find the correct electrical delay required to align Low Pass Step Transform data; and  
configuring said Low Pass Step Transform span and center time to align coherent inductive and capacitive discontinuities relative to grid lines of a TDR display.
3. (Original) The method of claim 2 additionally comprising:  
setting a first channel to Low Pass Step Transform and a second channel to a scattering parameter  $S_{11}$ ;  
finding  $f_0$ , the frequency at the peak amplitude of the largest lobe of said scattering parameter  $S_{11}$  in the frequency band of interest;  
setting electrical delay to zero;  
finding the phase of  $S_{11}$  at  $f_0$ ;  
denoting said phase  $\theta$  (degrees);  
setting electrical delay in said first and said second channels to  $(90 - \theta) / (360 * f_0)$ ,  
such that said  $S_{11}$  lobe phase reads 90 degrees;  
setting said first channel span to  $10 / f_0$ ;  
setting said first channel center to  $0.4 * \text{span}$ ; and  
setting said first channel format to real.
4. (Original) The method of claim 3 additionally comprising:  
ensuring a valid 1-port calibration is performed on said VNA;  
setting said first channel reference position to five divisions;  
setting said first channel reference value to zero; and  
setting said first channel scale to 0.05 units per division.

5. (Original) The method of claim 2 additionally comprising repeating said method for any additional problem VSWR lobes in said frequency band of interest, in order of decreasing lobe magnitude.

6. (Original) The method of claim 2 further comprising calibrating the magnitudes of capacitive, inductive, and resistive discontinuities, thereby allowing the design of correctly sized compensating features.

7. (Original) The method of claim 3 wherein said method is performed manually.

8. (Original) The method of claim 3 wherein said method is performed automatically.

9. (Original) The method of claim 8 additionally comprising:  
providing a suitable VNA;  
placing by a user a user-scrollable display marker on a VSWR or  $S_{11}$  lobe of interest;  
pressing a control key by said user, thereby initiating automated execution of said method; and  
automatically displaying a Low Pass Step Transform with correct time alignment for identifying coherent, canceling, and orthogonal circuit discontinuities.

10. (Original) The method of claim 9 wherein said suitable VNA comprises:  
a visual display;  
a processor operable to process time domain and frequency domain reflection signals for graphic presentation on said visual display, said processor capable of performing VNA state control and vector mathematical operations: and  
wherein said display includes a visual display marker having a recognizable shape.

11. (Original) The method of claim 6, wherein said method is performed automatically.

12. (Original) The method of claim 11 additionally comprising:  
providing a suitable VNA; and  
calculating the relationship of discontinuity amplitude to excess capacitance and/or excess inductance using a processor associated with said VNA.
13. (Original) The method of claim 12 additionally comprising placing a user-scrollable display marker on a time-domain discontinuity;
14. (Original) The method of claim 12 additionally comprising accepting at a user interface of said VNA y-axis scaling unit inputs of pF per division and/or nH per division.
15. (Original) The method of claim 12 additionally comprising selecting via a calibration enunciator of a TDR display of said VNA a scale in pF per division and/or nH per division in response to user interface entry of units per division.
- 16-21. (Canceled)